2014 DARPA Young Faculty Awardees

Optimizing Supervision for Improved Autonomy

Dr. Panagiotis Artemiadis
Arizona State University
Optimizing Human Supervision of Multi-agent Systems

Dr. Spring Berman
Arizona State University
Specification and Control of Customizable Multi-Robot Systems for Distributed Sensing and Cooperative Manipulation

Neurobiological Mechanisms of Social Media Processing

Dr. Emily Falk
University of Pennsylvania
Neural Mechanisms of Influence, Deterrence and Message Propagation

Mathematical and Computational Methods to Identify and Characterize Logical and Causal Relations in Information

Dr. Necmiye Ozay
University of Michigan
Dynamics-based Information Extraction: A Hybrid Systems Approach

Dr. Jarvis Haupt
University of Minnesota
Model-Based Matrix Completion: A Paradigm for Imputation, Fusion, and Inference from Multi-modal Data

Time-Dependent Integrated Computational Materials Engineering

Dr. Yang Jiao
Arizona State University
Integrated Computational Scheme for the Characterization, Modeling and Prediction of Microstructure Evolution and Fatigue Response in Titanium Alloys

Dr. Michael Sangid
Purdue University
Predictive Materials Science and Fatigue Life Prognosis

Long-range Detection of Special Nuclear Materials

Dr. Clair Sullivan
University of Illinois
A New Approach to Stand-off Detection of Special Nuclear Material using Big Data Analysis

Alternate Fusion Concepts

Dr. Carlos Romero-Talamas
University of Maryland
Simulations of Spheromak Formation and Sustainment from Multi-pulse Helicity Injection

New Materials and Devices for Monitoring and Modulating Local Physiology

Dr. Mikhail Shapiro
California Institute of Technology
Selective Ultrasonic Bioswitches for Precise Local Modulation of Physiology

Dr. Amin Arbabian
Stanford University
Highly Miniaturized Deep-Tissue Wireless Implants with Acoustic Power and Data Links

Dr. Christopher Bettinger
Carnegie Mellon University
Orthogonal Parameterization of Bioinspired Peripheral Nerve Interface Materials

Methods and Theory for Fundamental Circuit-Level Understanding of the Human Brain

Dr. Andrea Tao
University of California, San Diego
Plasmonic Nanoprobes for Neuronal Monitoring

Dr. Rajesh Rao Nadakuditi
University of Michigan
Fundamental Limits and Algorithms for Eigen-wavefront Based Imaging Through Highly Scattering Random Media

Hierarchically Complex Materials that Respond and Adapt

Dr. Ovijit Chaudhuri
Stanford University
Hierarchically Structured Hybrid Biopolymer Hydrogels for Treatment of Traumatic Injuries on the Battlefield and to Promote Long-Term Tissue Regeneration

Dr. Aaron Esser-Kahn
University of California, Irvine
Morphogenetic systems for adaption in complex materials

Dr. Tak-Sing Wong
Pennsylvania State University
Mind-Controllable Interfacial Materials

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Disruptive Materials Processing

Dr. Vivienne Sze
Massachusetts Institute of Technology
Energy-Efficient Embedded Vision Systems

Dr. David Wentzlaff
Princeton University
Looking Beyond the Dark, Rethinking General Purpose Computer Architecture for UAV and Space Processing

Disruptive Computing Architectures

Dr. Jessica Ruyle
University of Oklahoma
Placement Insensitive Antennas Approaching Two-Dimensionality for Conformal Multi-Paltform Use

Modeling Phonon Generation and Transport in the Near Junction Region of Wide-Bandgap (WBG) Transistors

Dr. John Albrecht
Michigan State University
Modeling Phonon Generation and Transport in the Near Junction Region of Wide Band Gap (WBG) Transistors

Dr. Satish Kumar
Georgia Tech Research Corporation
Electron-Phonon Transport in High-electron Mobility Transistors including Electromagnetic Effects

Advanced Automation and Microfluidic Technologies for Engineering Biology

Dr. Jacob Robinson
William Marsh Rice University
Electrophysiology-Assisted Cell Sorting (E-phACS) for High-throughput Synthetic Neurobiology

Dr. Pamela Peralta-Yahya
Georgia Tech Research Corporation
Chip-based Yeast Engineering for the Production of Chemicals

Energy Recovery in Post-CMOS Technologies

Dr. Songbin Gong
University of Illinois
Parametrically Excited Resonant Computing systems (PERCs)

Thin Film Transistors for High Performance RF and Power Electronics

Dr. Becky Peterson
University of Michigan
Amorphous Oxide Thin Film Transistors for Switched-Mode Power Supplies

Neural Inspired Computer Engineering

Dr. Thomas Serre
Brown University
Scaling up Computational Models of Visual Processing in Cortex

Dr. Mike Shuo-Wei Chen
University of Southern California
Dual-Channel UWB Impluse-Based interconnect towards Large Scale Plastic Neural Network